

on investment. The approach that the Commission proposes would also not be unduly burdensome, because there would be a limited number of applicable benchmarks (based on system characteristics), and extensive data would not be required for each individual system.

We propose instead a modified cost-of service benchmark approach that applies certain industry cost norms along with certain straight-forward and readily obtainable system-specific information to generate ceiling rates for each franchise area that seeks to regulate basic service tier rates, or for areas where the Commission must determine whether expanded basic rates are unreasonable. We believe that the proposed approach is very feasible, and we have outlined it in detail in Appendix A.

6. Price Caps²¹

The price cap would not be a method to set initial rates, but to define reasonable rate changes in the future. It would therefore be used in tandem with one or more of the other approaches which would be used to set initial rates. The Commission has cited certain advantages of the price cap approach; for example, it creates incentives for companies to operate efficiently and minimizes the amount of regulatory intervention required to help assure that rates remain reasonable.²² We agree with the advantages cited with respect to using price caps for future rate changes, but only after a reasonable cost-based benchmark has been established.

The questions posed by the Commission generally have to do with how the price cap should be developed, revised, and administered. Selecting a single index may not be appropriate because there is no existing index that reasonably reflects the production factors applicable for a cable system. Single factor approaches, such as changes in the cost of programming, are also inappropriate because no single factor clearly dominates the cable industry cost structure. Further, certain highly material costs, such as the construction of the plant, do not change once they are sunk. It therefore seems that if the Commission is to apply a reasonable and workable price cap escalator, it will need to construct one. We believe that the cost-of-service benchmark model that we propose in Appendix A provides an appropriate method not only to determine the reasonable starting point for rates, but also to index changes in cable system costs over time, in a manner that fairly represents the key cost factors in the industry.

²¹ NPRM paras. 49 through 52.

²² NPRM para. 51.

7. Direct Costs of Signals Plus Nominal Contribution to Joint and Common Costs²³

This alternative would seemingly meet the objective of achieving basic service rates that are no higher than competitive rates because the Commission apparently intends that this method would cover direct costs, but could recover less than the fully allocated costs of the basic tier.

The Commission raises the possibility that very low basic service rates -- set on the assumption almost no joint and common costs are allocated to basic -- could discourage operators from placing more valuable services on the low basic tier.²⁴ That is one reason why we believe that, as an initial matter, the same regulatory method and an integrated approach should be applied to basic and expanded basic levels of service, and why the Commission must be especially vigilant in fulfilling its duty under the Act to assure that expanded basic rates do not become unreasonable. Like the "nominal cost" approach, the approach we propose in Appendix A would likely result in basic service rates on the lowest tier that would be significantly below what they are now in many systems. But, unlike the "nominal cost" method, our proposed approach would allocate costs on an equitable basis to the lowest basic tier and upper tiers, thus providing the Commission a mechanism to assess expanded basic rates and overall rates. To the extent required by statute, the "nominal" cost approach could be applied at the local level.

8. Cost of Service²⁵

Whether the Commission chooses to apply cost-of-service principles either as part of a primary benchmark model or as a secondary outlet to correct aberrant results (using either our proposed model or a more traditional utility approach), several key issues must be resolved and reflected in the regulations ultimately adopted by the Commission. We comment below on some of the critical issues presented in a pure cost-of-service model including:

- Related party transactions
- Depreciation and rate base
- Intangible assets

²³ NPRM paras. 53 through 56.

²⁴ NPRM para. 55.

²⁵ NPRM paras. 57 through 61.

- Tangible asset values
- Prudency

Related-party transactions. The Commission should be alert to related-party transaction pricing issues, both in constructing cost norms for a benchmark model and in reviewing system specific cost-of-service information. A particular issue is the practice used by certain multiple system operators (MSOs) for assigning programming costs to local systems. In some cases, we believe, the costs shown in local system statements may include a mark-up added by the parent company, over its cost to acquire the programming from the supplier. This issue is compounded by the fact that the transactions between certain MSOs and certain program suppliers are not arms-length, due to cross ownership. Consequently, we believe that the price the parent company pays should be analyzed to develop cost norms or to evaluate actual programming costs.

We have a similar concern regarding other charges from the parent company, including general and administrative overhead allocations and management fees. In either a benchmark cost model or in reviewing specific system costs, the Commission should assure that any such costs included are reasonable. One test, for example, is whether the cost would be incurred if the local operation were autonomous.

Another such concern is the practice of having advertising revenue flow to an affiliated company, with only some or none of this revenue recorded on the books of the local system. This practice could affect the proper consideration of revenue off-sets to subscriber rates, which Congress directed to be considered in rate regulation.

Depreciation and Rate Base. In our proposed model (Appendix A) we develop a "rate base" based on replacement costs and we assess revenue requirements on a cash basis, before depreciation. We believe that cash flow operating results are more meaningful in the industry than post-depreciation results, and industry analysts typically look at cash flows as one of the key factors to assess the financial health of cable systems. Our model is fair to operators because we include an allowance for replacement or upgrade costs, and the return-on-capital base is valued at replacement cost, not net depreciated value. However, if a cost-based approach is to be applied on a system specific basis (distinct from determining norms), a depreciated rate base approach may be more meaningful. This would be especially true in situations where the plant is old and has not been upgraded.

Intangible assets. To the extent the Commission becomes involved in system-specific cost-of-service reviews, we note that a particular problem is presented by intangible assets. The Commission seeks comment on whether and how much "goodwill" should be included in the

rate base.²⁶ We first suggest that a clarification of terms would be appropriate. We believe that by "goodwill" the Commission actually means "intangible assets." "Goodwill" can be a subset of intangible assets, but there are others as well. In this case, we believe that "franchise value" and "going concern value" should also be specifically considered. The intangible assets result from accounting transactions to reconcile the cost of a system acquisition with the current tangible value of that system. Typically the tangible assets are valued at current market prices or depreciated replacement costs, and the difference between the purchase price and the tangible asset values are assigned to intangibles.²⁷

An extensive discussion of the treatment of intangible assets for cable television systems appears in the record of a 1990 United States Tax Court case.²⁸ The court found that "goodwill" did not exist for certain cable systems that held monopoly status, defining "goodwill" as "the expectancy that old customers will resort to the old place." The intangible assets of a cable system may instead be assigned either to "going concern" value or "franchise" value. For the cable television business, "going concern" value may be thought of as the cost an operator has sunk to acquire new subscribers (and that a purchaser may therefore forego when he buys an existing system rather than starting a new system). The "franchise" value is the residual resulting from subtracting the tangible asset value and the "going concern" value from the purchase price.

Courts have declared that "goodwill" cannot have a value in a monopoly, and we believe that the "going concern" value is typically only a small part of the intangibles that are booked for many cable systems. At most the "going concern" value would be the marketing and other prematurity costs sunk to acquire the subscriber base, distinct from the ongoing operating costs necessary to retain old subscribers.²⁹ That leaves the "franchise" value as the largest component of the intangible assets.

²⁶ NPRM Appendix B, paras. 3 and 4.

²⁷ The intangibles are not the premium paid over original cost, as suggested in NPRM Appendix B, para. 3.

²⁸ United States Tax Court, Docket No. 268-89 (Filed November 7, 1990). Telecommunications, Inc. and Subsidiaries v. Commissioner of Internal Revenue. 95 T.C. No. 36.

²⁹ We believe that the burden should be on cable operators to support the valuation of "going concern" value for specific systems if it is to be included in a the cost-of-service rate base. For the systems reviewed in the cited U.S. Tax Court case, the court found "going concern" value to be about 13 percent of the intangible assets.

To define the "franchise" value, we quote at some length from a paper submitted by Mr. William Shew in support of Tele-Communications, Inc. in the cited tax case:³⁰

The value of a franchise stems from the prospect it offers to earn supernormal profits. For this prospect to be credible, the franchise holder must expect that he will be insulated from intensive competition. Otherwise the allure of supernormal returns would attract firms into the market until the rate of return was driven down to the normal level.

The franchisee may be insulated from competition either because the market he serves is naturally unsuited to competitive entry or because the franchising authority protects the franchise holder from competition.... Regardless of how a franchise holder is insulated from competition, the value of a franchise is the (capitalized) value of the supernormal returns expected from the franchised activity -- the income over and above what would provide the investor with a competitive return for the risk involved... Thus, it is the prospect that the authorized activity will yield a supernormal rate of return -- in excess of the investor's cost of capital -- that gives value to a franchise.

The franchise value represents the capitalized value of the monopoly profits expected from the system. To include this component in the rate base and allow a return on it would directly contradict the intent of the Act to eliminate any monopoly component of rates. Rates would continue to reflect a monopoly increment if a return was earned on the franchise value intangible. In addition, allowance of the franchise value intangible would treat systems that have had stable ownership unfairly in relation to systems where ownership has changed, because it is typically only through a sale transaction that a large franchise value may be booked.³¹ Allowing the rate base to be stepped up substantially through a system sale would encourage trafficking in systems that presently book relatively low intangible franchise values, a result that we believe would be undesirable for consumers and franchising authorities.

To the extent that current system owners may perceive disallowance of the intangible franchise value as unfair (it does reflect actual capital invested in purchasing the system), we note that the expected rate of return inherent in the purchase price reflected risk assumptions. The future high rates and profits were not and should not be guaranteed.

³⁰ William B. Shew, National Economic Research Associates, Inc. "The value of Three Cable TV Franchises." November 30, 1989; pages 4 and 5.

³¹ Although the original operator may have capitalized its sunk costs to acquire the initial franchise, this amount was generally small in relation to the increase in franchise value intangibles that has occurred due to system sales since 1984.

For the same reasons that we believe that intangible franchise value should not be included in the rate base even in a traditional cost-of-service model, we believe it is inappropriate to allow amortization of this intangible item as an expense.

Tangible asset values. The traditional utility cost-of-service approach typically values property, plant, and equipment based on net book depreciated value. As pointed out above, this value can change when a system is sold because a physical appraisal of the assets may be performed to re-value them and potentially "step-up" their net book value. Our proposed benchmarking approach avoids this issue by valuing the physical assets on a replacement cost basis, rather than on net book value. However, the potential step-up in physical asset values could be an issue if the Commission chooses to apply the utility cost-of-service method to individual systems. Similar to the intangible asset concern, the physical asset step-up potential could undesirably encourage system sales. We believe that the Commission's rules, if cost-of-service regulations are adopted, should constrain this potential by rate base disallowances of stepped up values due to a system sale.³²

Tangible assets for which rates are separately determined, such as converters and remote control units or capitalized installation costs, should not be included in the rate base for basic or other programming services. To do so would provide a "double return" on these assets.

Prudence. The assets included in the rate base should be "used and useful," and the operating expenses that are allowed should be reasonable. Imprudent capital expenditures or unreasonable operating expenses should be excluded. For example, in a system where considerable cost was sunk into a failed design, necessitating re-construction, we do not believe that the cost of the failed construction should be included in the rate base.

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³² Increases in physical asset value due to replacement or upgrades should be allowed, if prudent.

Appendix A

**REPORT TO THE FEDERAL COMMUNICATIONS COMMISSION
IN RESPONSE TO NOTICE OF PROPOSED RULEMAKING TO IMPLEMENT
RATE REGULATION SECTIONS OF THE CABLE TELEVISION CONSUMER
PROTECTION AND COMPETITION ACT OF 1992**

(FCC 92-544; MM Docket 92-266)

APPENDIX A: COST-OF-SERVICE BENCHMARK MODEL

January 27, 1993

Submitted by:

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Appendix A

COST-OF-SERVICE BENCHMARK MODEL

1. Overview of the Model

We propose a cost-of-service benchmark model to assist franchising authorities and the Federal Communications Commission (Commission) to regulate cable television rates, consistent with the requirements of the Cable Television Consumer Protection Act of 1992 (Act). The model combines certain national normative data on cable television system costs with inputs specific to the local franchise area. National norms would be developed after collection of cost data and a further rulemaking. While the example discussed below indicates specific factors we believe are most likely to prove appropriate for local specific treatment, the Commission could, as a matter of policy, or if the data allows it, include fewer or no local specific factors. The model may be run using actual local cost factors, a combination of local and national norm information, or with national norms alone. The proper balance will depend upon the ability of the Commission to develop reasonable norms for particular cost categories, on policy choices, and on the likelihood that the resulting mode will produce rates that are neither too high nor too low.

The result of the model is a rate ceiling for both basic and expanded basic service tiers. It addresses each of the factors that Congress and the Commission specified for consideration. We believe that the benefits of the proposed model include the following:

- Assures that basic service and expanded basic rates are collectively reasonable, protecting subscribers of any system not subject to effective competition from paying rates higher than those that would be charged if the system were subject to effective competition
- Applies consistent procedures to basic and expanded basic tiers
- Requires only information that is readily obtainable
- Based on a spreadsheet or table that may be distributed to local franchising authorities to ease administrative burdens for both local authorities and the Commission
- Provides appropriate incentives for cost control by applying normative costs
- Reflects the key relevant local factors, including those specified in the Act
- May be used as the method to determine annual price cap changes

Appendix A

The model addresses each of the factors which the Commission wishes to consider and which are specified in the Act as follows:

- **Rates for cable systems that are subject to effective competition.** The model simulates the rates that would be required to sustain a competitor if the competitor enjoyed the same economies of scale and scope as operators facing no effective competition. The competitive rate is simulated by including all reasonable costs of providing the service, but excluding any increment above that required to produce a reasonable return. Cost data from systems facing effective competition could be used as an important sub-sample of the data collected to develop the norms that help drive the model.
- **A reasonable profit, consistent with the goal of protecting subscribers in any cable system not subject to effective competition.** A reasonable return on investment component can be included in the model, sufficient to attract capital to the business.
- **Rates for similarly situated systems taking into account similarities in costs and other relevant factors.** The cost norms used in the model will be based on cost data collected from a broad sample of systems. If there are verifiable differences in normative costs based on system characteristics (number of subscribers, plant miles, market, etc.), the norms could be grouped in categories that allow the benchmark for any particular system to be based on norms for those systems that are similarly situated. The rates produced by the model for any given community will be similar to those produced for communities that are similarly situated.
- **The rates for the system as a whole (other than programming provided on a per channel or per program basis).** The model generates rates for both the low basic and expanded basic tiers, so the reasonableness of the total rate may be assessed. The model also includes revenue from equipment and installations; this revenue is segregated from the revenue requirements for basic services.
- **The history of rates for the system including their relationship to changes in general consumer prices.** The model can be used to evaluate rates as industry costs change. It may be used to calculate an index for price cap changes, and the index may be compared to changes in general consumer prices.
- **The capital and operating costs of the system.** The model calculates rates based on the capital and operating costs. In the model, these costs are derived using national norms for construction costs and local specific factors, such as plant miles, that determine the final system costs.

Appendix A

- **The direct cost of obtaining, transmitting, and providing basic tier programming.** The model can either use national norms or assign programming costs to the appropriate tier based on actual channel line-ups for each specific franchise area. In addition, if costs such as retransmission fees, for example, vary by community, the model can be made sensitive to the variance.
- **Only a reasonable and properly allocable share of joint and common costs.** The model applies reasonable methods to allocate joint and common costs among basic, expanded basic, and pay services.
- **Revenue from advertising and other sources.** Consistent with the requirements of the Act, advertising and other revenues associated with the basic and expanded basic services tiers are included.
- **The reasonable and properly allocable portion of taxes and fees imposed by any state or local authority.** Specific local inputs may be included in the model to assure that such taxes are included.
- **The cost of satisfying franchise requirements to support public, educational, and access (PEG) channels.** The model may include a specific local input for PEG support, or national norms, as appropriate.

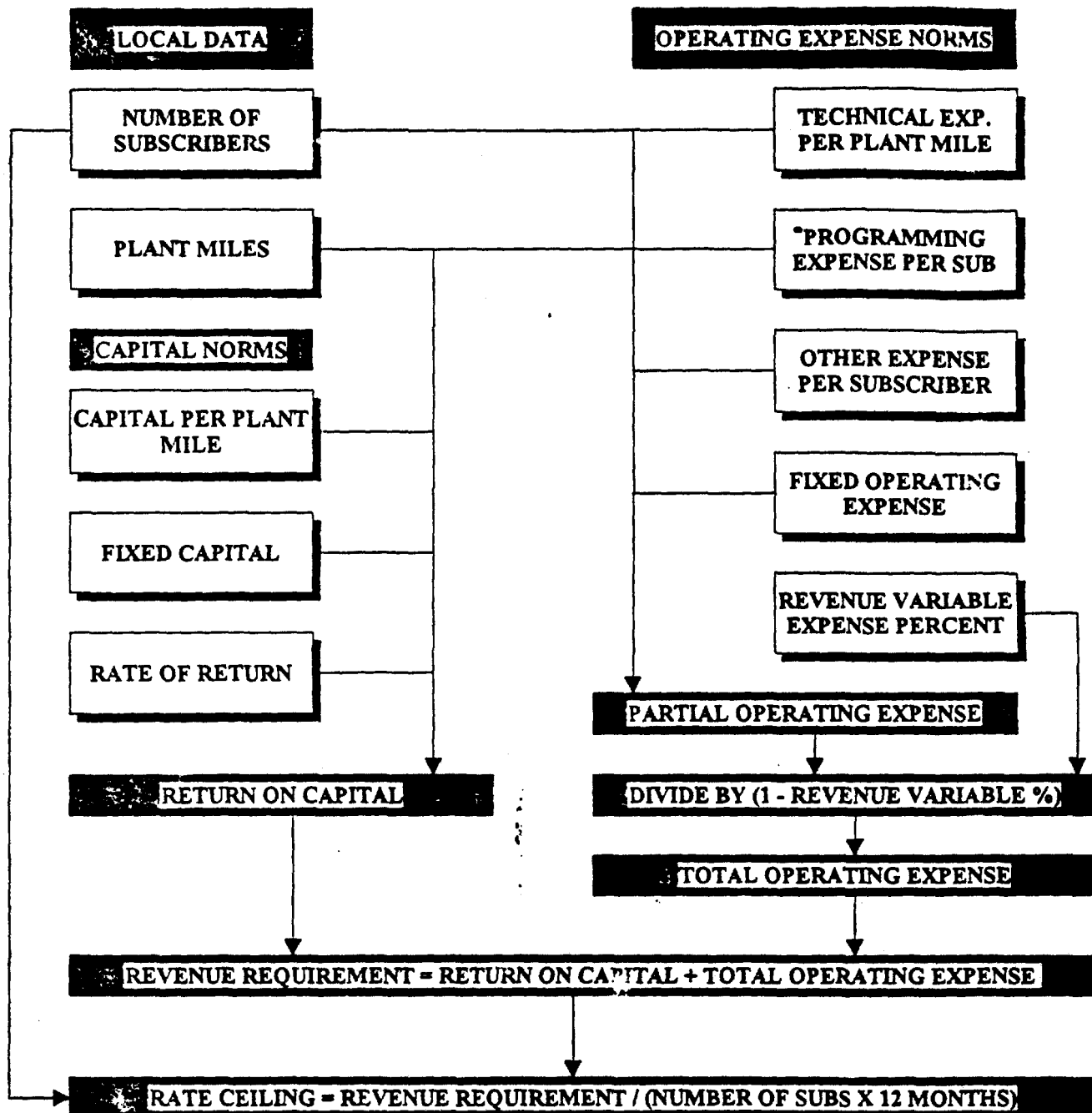
2. Key Concepts Incorporated in the Model

The model simulates a cable operation having the same economies of scale and scope that the existing operator has in particular franchise markets. Actual numbers of subscriber counts, plant mileage, and channel offerings are used to help assure that the scale and scope factors fairly represent the actual local conditions. However, to avoid the need for hundreds or thousands of detailed local cost-of-service studies, normative cost data can be used for all or most key cost variables. The use of cost norms helps assure that the costs that are included are reasonable and prudent, and creates an incentive for efficient expenditure.

An overview of a simplified model appears in Exhibit A-1. The variables shown in the exhibit are used to calculate return on capital and operating expense norms. A norm for capital expenditures to maintain the system is also included. The revenue requirement is the amount necessary to cover a return on capital, capital replacement and operating expenses. The revenue requirement, divided by twelve times the number of subscribers (to convert to monthly) yields the cost based rate for any given service tier.

EXHIBIT A-1

OVERVIEW OF SIMPLIFIED COST-OF-SERVICE BENCHMARK MODEL



Appendix A

The net result of the model may be thought of as a rate selected from a cell in a three-dimensional matrix like that shown in Exhibit A-2. In the simple form of the model, the number of subscribers, the number of plant miles, and the number of satellite services carried determine which rate norm is appropriate for a particular basic or expanded basic service tier for a particular community. The model could also be used with a larger set of local determining factors.

The model allocates overall costs to particular tiers of service. A flow diagram of the cost allocation approach appears in Exhibit A-3. To facilitate the determination and allocation of cost norms, operating costs are broadly classed into categories commonly used in the industry:

- Programming
- Technical (or Operations or Plant)
- Marketing
- General and Administrative

ILLUSTRATION OF THREE-DIMENSIONAL TABLE OF BASIC RATES

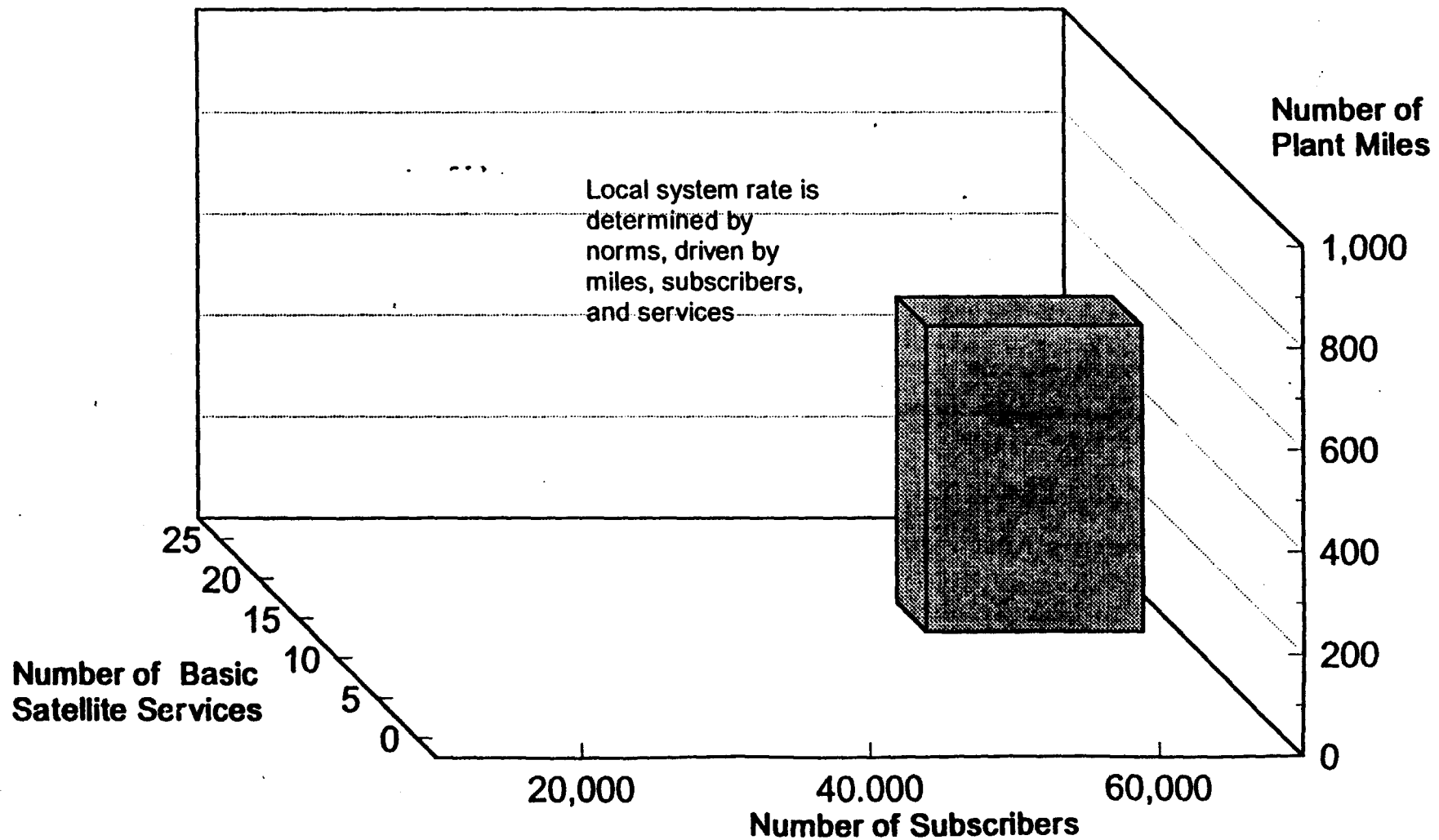
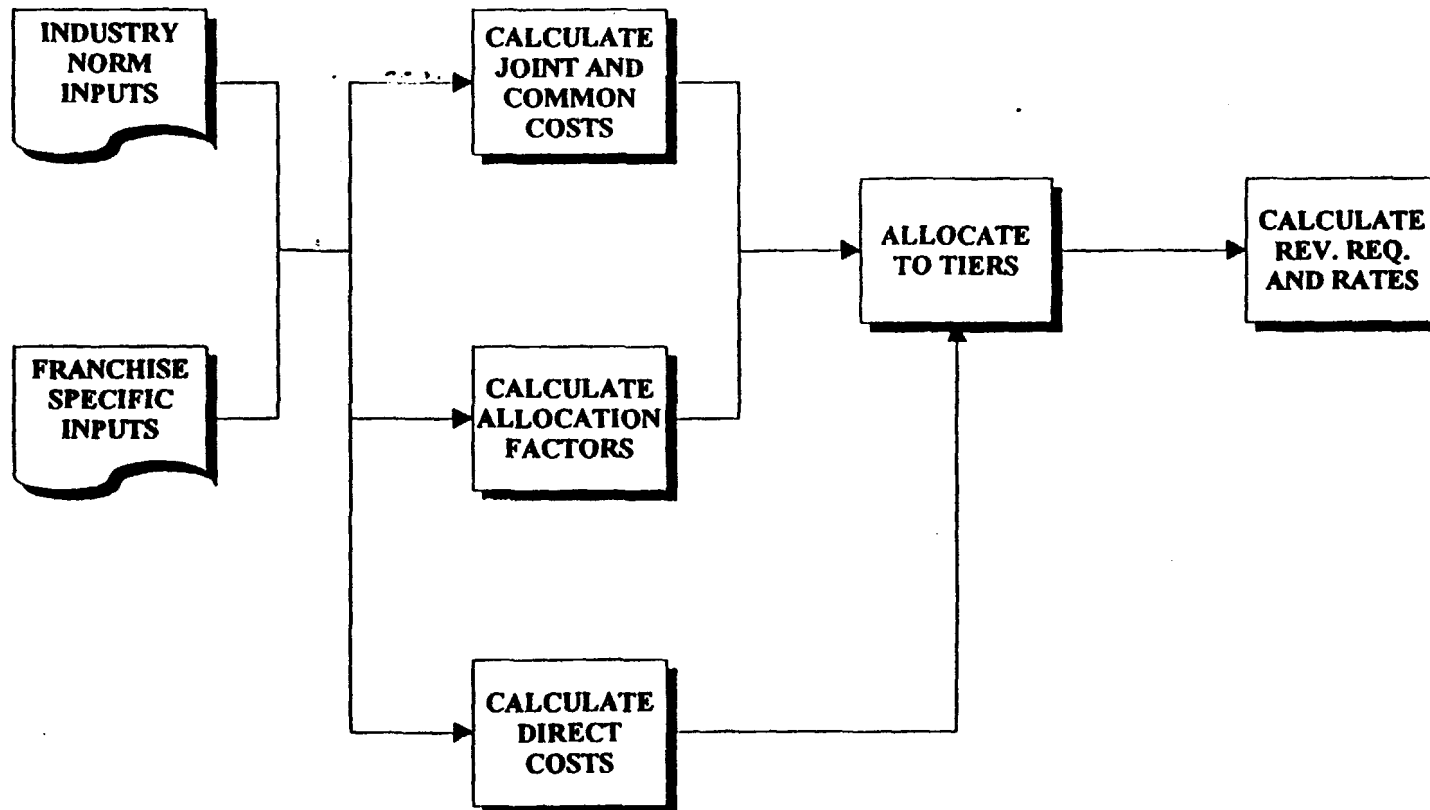


EXHIBIT A-3

**OVERVIEW OF COST ALLOCATION
FLOW**



Appendix A

Within these categories the costs are further classified into categories that permit them to be reasonably aggregated and allocated:

- Variable per plant mile
- Variable per subscriber
- Variable as a percent of revenue
- Fixed¹

Capital expenditures are also classified into variable and fixed categories.² Construction costs vary per mile. Thus the model will pick up costs as plant may be extended from year to year. Other costs, such as the headend, are relatively fixed, based on the type of system. Subscriber equipment costs, such as converters, and capitalized connection costs are not included in the capital expenditure based because the model assumes that these costs will be recovered through separate charges for equipment sales or rentals, and service installations.

Capital expenditures would normally be based on current replacement cost in order to simulate current entry of a competitor. The model also includes an allowance for annual replacement capital expenditures to maintain the system. The advantage of using replacement levels is that it helps assure that revenue requirements keep pace with technology -- the capital expenditure norms may be updated annually to help assure that industry returns are sufficient to build

We propose that the "fixed" operating cost norms be treated in a step function fashion, depending on the outcome of the Commission's analysis of the data it collects. For instance, a limited number of broad subscriber size categories (e.g., 0 - 5,000; 5,001 - 20,000; 20,001 - 100,000; etc.) could be created, a specific fixed costs assigned to programming, technical, marketing, and general and administrative for each category. The appropriate figures can be determined through an analysis of residuals in each category after the variable and total category costs have been determined.

² Similar to the fixed operating costs, we see both variable and fixed capital costs being assigned to a system type categories, so that the appropriate benchmark amounts may be selected for each system. Here the categories may be determined by factors such as urban/rural, the total plant miles, the megahertz capacity of the system, the percentage of fiber in the plant, addressability, and interactive capability. Again, we will leave the selection to the results of the Commission's data analysis, but we believe the number of such categories should be limited to maintain an approach that is simple to administer.

Appendix A

modern systems. The disadvantage of using the replacement cost level is that it may overstate actual investment made in some systems, particularly ones that have not been maintained or upgraded, and therefore provide the operator higher returns than might be provided using system specific historical data. Thus the capital expenditures used in the model could be based on actual historical costs for exception/appeal cases.³

A weighted average cost of capital approach is applied to determine an appropriate return on the capital investment.

Revenue requirements are allocated to service tiers through the following procedures:

- Costs that are directly assignable to a specific tier are directly assigned. Generally these will be only programming costs.
- Other costs are classified on one of the following bases: per plant mile, per subscriber, revenue variable, or fixed.
- The plant mile variable costs, capital replacement costs and the allowable return on capital investment are distributed between basic services, expanded basic services, and pay services based on the percentage of channel capacity used by each group.
- All other joint and common costs are allocated based on subscriber percentages. The subscriber count for pay services is determined by the number of customers taking at least one pay service.
- Off-setting non-subscriber revenues are directly assigned to tiers where possible, and if they are derived from more than one tier they are distributed based on relative subscriber counts.
- A partial revenue requirement is calculated for each service tier, based on the costs allocated to this point in the procedure. Then the appropriate revenue variable percentages are applied to each tier to determine the total revenue requirement for each respective tier.

The total annual revenue requirement for each tier, divided by twelve months, divided by the average number of tier subscribers, yields the rate.

³ Alternatively, one could use the cost norms to develop the cost per channel that would apply if the replacement system were built (since the normative cost will imply a certain channel capacity). If applied to systems that have significantly lower channel capacity than the norm, this approach would encourage system upgrades.

Appendix A

3. Administration of the Model

As we envision the process, the Commission will have the following responsibilities to administer the model:

- Collect cost data through an annual survey of a sample of cable systems
- Establish initial norms
- Distribute a simple form that localities could use to apply the final model
- Update the cost norms as appropriate

The Commission's principal task in 1993 will be to develop the initial benchmark norms. For this initial round we suggest that the Commission collect data for a number of local specific cost factors (as documented in this appendix) and analyze how much of the variability in average costs may be explained with and without these factors. The Commission should also assess certain external factors that may affect costs, such as the television market category for each system analyzed. Based on the results of this initial analysis the Commission may empirically determine which cost and other variable are most appropriate to apply to in the future. For example, it may be that only a few local variables are needed (such as the number of subscribers and plant miles), and that national norms may be applied for all other factors. Or, the Commission may find that various local specific factors are required to give the model sufficient power to reasonably project costs. After concluding this analysis the Commission may develop a form that shows what data is to be filled in using national norms, and what requires local information.

Making the model available on a microcomputer spreadsheet to local authorities, although not necessary, would likely simplify the process and reduce the possibility for errors. However, the Commission could merely develop simple manual tables for use by jurisdictions.

Appendix A

4. Model Detail

The proposed cost-of-service benchmark model appears in Exhibit A-4.⁴ The model consists of five sections:

- Model Inputs
- Allocation Factors
- Joint and Common Cost Pool
- Tier Allocations
- Revenue Requirements

The input section is described below. All other sections are calculations derived from the inputs. The general basis for these calculations has been described in the preceding sections of this appendix.

Franchise specific data⁵

We propose that certain franchise area specific information may be applied together with national norm information to help assure that the benchmark rates fit individual communities.⁶ The local information required is straight-forward, and should not impose undue reporting burdens on franchise authorities or cable operators. The minimum local data requirements include: (1) number of subscribers; (2) plant miles; and (3) the number of channels

⁴ In the illustration of the model that appears in this section particular figures are included as "industry norms." We do not intend that these figures to represent actual norms, but include them merely to clarify the model presentation. Under our proposal, the Commission would become responsible for data collection and analysis to develop the actual norms.

⁵ We propose these data as "franchise specific" for the purpose of initial Commission data collection and analysis. The results of the initial analysis may indicate that many of these inputs may be treated as norms in the future, in order to simplify administration of the model.

⁶ The data should be specific to each franchise area. Many local cable systems contain multiple franchise areas, and therefore should report separately for each area. Certain data (for example, channel capacity) may be the same for each franchise area within a particular system

EXHIBIT A-4: CABLE TV RATE BENCHMARK MODEL

	A	B	C	D	E
1					
2	I. MODEL INPUTS				
3					
4	<u>Franchise Specific Data</u>			<u>Industry Norms</u>	
5					
6	Franchise area statistics			The figures used below are included only to illustrate how the	
7	Homes passed	100,000		cost-of-service model works. They are not intended to represent	
8	Aerial plant miles	700		actual norms. The determination of actual norms will result	
9	Underground plant miles	300		from FCC data collection and analysis.	
10	Number of subscribers	54,000			
11	Number of basic only subscribers	2,700		Capital cost drivers	
12	Number of expanded basic subscribers	51,300		Aerial plant cost per mile	\$17,000
13	Number of pay customers*	27,000		Underground plant cost per mile	\$60,000
14	Number of converters in use	37,800		Headend, towers, antenna, hubs	\$1,000,000
15	Number of remotes in use	27,000		Other	\$1,500,000
16	Number of annual installs - new	8,100			
17	Number of annual installs - reconnect	8,100		Operating cost drivers	
18	Number of additional outlet installs	8,100		<u>Programming</u>	
19				Basic programming per basic subscriber***	\$5.00
20	PEG support (annualized)	\$200,000		Exp. basic program. per exp. basic sub.***	\$40.00
21				Pay/PPV program. per basic subscriber****	\$48.00
22				Fixed programming expense	\$50,000
23	Franchise area operating cost drivers			<u>Technical/plant</u>	
24	Franchise fee percent	5.0%		Technical cost per mile	\$1,000
25	Copyright fee percent - basic	1.0%		Technical cost per subscriber	\$10.00
26	Copyright fee percent - exp. basic	2.5%		Fixed technical expense	\$200,000
27	Other state/local taxes percent of rev.	2.0%		<u>Marketing</u>	
28	Retransmission expense - basic	\$50,000		Marketing cost per subscriber	\$10.00
29				Fixed marketing expense	\$100,000
30	<u>Other regulated rates</u>			<u>General and administrative</u>	
31	Installation charge - new	\$50.00		G&A cost per subscriber	\$30.00
32	Installation charge - reconnect	\$15.00		Bad debt percent of revenue	1.5%
33	Additional outlet install charge	\$15.00		Other G&A percent of revenue	3.0%
34	Coverter charge per month	\$3.00		Fixed G&A expense	\$1,000,000
35	Remote control charge per month	\$1.00			
36					
37	Other revenue (tiers in parentheses)			Allowable return on capital	12.0%
38	Advertising (exp. basic)**	\$648,000			
39	Home shopping (exp. basic)**	\$324,000		<u>Install and equip. expenses per sub</u>	<u>\$17.00</u>
40	Other (basic)**	\$324,000			
41				* Pay customers is the number with at least one	
42	Channels			pay service	
43	Basic	17		** Tiers assigned based on local alignment	
44	Expanded basic	27		*** Programming expense based on national norms	
45	Pay and pay per view	10		for specific services, aggregated for actual channel	
46				line-up of the system	
47		Total	54	**** Pay/PPV revenue not needed for basic calculations;	
48				total pay/PPV revenue divided by the number of	
49	Shaded variables represent the minimum set of local data			basic/expanded basic subscribers	
50	required. Other local variables could be determined as				
51	national norms instead.			<u>Boxed inputs not required for basic or expanded basic</u>	
52					
53	II. ALLOCATION FACTORS (calculated from model inputs)				
54					
55	Channel allocation percentages			Subscriber allocation percentages	
56	Basic	31.48%		Basic services*	3.33%
57	Expanded basic	50.00%		Expanded basic services**	63.33%
58	Pay and pay per view	18.52%		Pay services***	33.33%
59					
60	Revenue variable expense			* Number of basic only divided by sum of basic only,	
61	Basic	12.50%		expanded basic, and pay customers	
62	Expanded basic	14.00%		** Number of expanded basic divided by sum of basic only,	
63	Pay and pay per view	11.50%		expanded basic, and pay customers	
64	Other revenue	11.50%		*** Number of pay customers divided by sum of basic only,	
65				expanded basic, and pay customers	
66					

EXHIBIT A-4: CABLE TV RATE BENCHMARK MODEL

	A	B	C	D	E
68	III. JOINT AND COMMON COST POOL (calculated from model inputs)				
69					
70	Construction cost		Per channel operating expenses*		
71	Headend, towers, antennae, hubs	\$1,000,000	Programming		\$0
72	Aerial plant	\$11,900,000	Technical	\$1,000,000	
73	Underground plant	\$18,000,000	Marketing		\$0
74	Other	\$1,500,000	General and administrative		\$0
75					
76				Total*	\$1,000,000
77	Total	\$32,400,000			
78			Per subscriber expenses**		
79			Programming	\$50,000	
80	Return on capital	\$3,888,000	Technical	\$740,000	
81			Marketing	\$640,000	
82	Capital replacement	\$1,620,000	General and administrative	\$2,620,000	
83			PEG support	\$200,000	
84					
85					\$4,260,000
86					
87					
88	* Includes variable per mile ; excludes fixed, per		**Excludes per channel expenses, direct programming		
89	subscriber expenses and expenses driven by revenue		expenses, and expenses driven by revenue; Includes		
90			fixed expenses		
91	IV. TIER ALLOCATIONS*				
92					
93	Basic allocations		Pay and pay per view allocations		
94	Annual operating per channel	\$314,815	Annual operating per channel	\$185,185	
95	Annual operating per sub	\$141,667	Annual operating per sub	\$1,416,667	
96	Return on capital**	\$1,224,000	Return on capital**	\$720,000	
97	Replacement capital**	\$510,000	Replacement capital**	\$300,000	
98					
99	Allocated revenue requirement*	\$2,190,481	Allocated revenue requirement*	\$2,621,852	
100					
101					
102	Expanded basic allocations				
103	Annual operating per channel	\$500,000	* Excludes direct programming expense and		
104	Annual operating per sub	\$2,691,667	revenue variable expense		
105	Return on capital**	\$1,944,000			
106	Replacement capital**	\$810,000	** Allocated on per channel basis		
107					
108	Allocated revenue requirement*	\$5,945,667			
109					
110					
111	V. REVENUE REQUIREMENTS				
112					
113	Basic		Pay and pay per view		
114	Allocated revenue requirement	\$2,190,481	Allocated revenue requirement	\$2,621,852	
115	Direct programming expenses	\$320,000	Direct programming expenses	\$2,582,000	
116	Less other revenue	(\$324,000)			
117					
118	Subtotal	\$2,186,481	Subtotal	\$5,213,852	
119					
120	Revenue variable expense	\$312,354	Revenue variable expense	\$677,606	
121					
122	Total revenue requirement	\$2,498,836	Total revenue requirement	\$5,891,358	
123					
124	Rate ceiling	\$3.88	Required revenue per subscriber	\$9.09	
125					
126	Expanded basic		Consolidated		
127	Allocated revenue requirement	\$5,945,667	Allocated revenue requirement	\$10,758,000	
128	Direct programming expenses	\$2,052,000	Direct programming expenses	\$4,864,000	
129	Less other revenue	(\$972,000)	Less other revenue	(\$1,296,000)	
130					
131	Subtotal	\$7,025,667	Subtotal	\$14,426,000	
132			Plus other revenue (installs, equip., and other)	\$3,628,800	
133	Revenue variable expense	\$1,143,713	Revenue variable expense	\$2,133,574	
134					
135	Total revenue requirement	\$8,169,380	Total revenue requirement	\$20,188,374	
136					
137					
138	Expanded component rate ceiling	\$13.27	Required revenue per subscriber	\$31.15	
139					
140	Combined expanded basic rate ceiling	\$17.13	Total revenue check	\$20,188,374	

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and satellite services on each tier. However, we recommend additional variables for the Commission's initial analysis, and they are therefore included here. The recommended inputs (column and line identifiers in parentheses) are described below.

Franchise area statistics

The primary statistics necessary to run the model include:

- Homes passed (B7). This figure is not applied in subsequent allocations, but may be appropriate to help determine which set of norms to apply, if the data analysis suggests norms should be based on market size.
- Aerial plant miles (B8). This figure should be ascertainable by franchise area within each cable system.
- Underground plant miles (B9). Underground miles are segregated from aerial because the construction cost may vary significantly; the aerial underground breakdown allows the model to be more sensitive to local characteristics. This figure should be ascertainable by franchise area within each cable system.
- Number of subscribers (B10); the total number of subscribers in the area. This figure should be readily available by franchise area from subscriber billing systems.
- Number of basic only subscribers (B11); the number taking only the lowest basic tier from among the basic options.⁷ This figure should be readily available by franchise area from subscriber billing systems.
- Number of expanded basic subscribers (B12); the number taking any level of basic service above the lowest basic tier. This figure should equal B10 minus B11. It should be readily available by franchise area from subscriber billing systems.
- Number of pay customers (B13). This is the number taking at least one pay service. It should be readily available by franchise area from subscriber billing systems. It is applied to allocate certain joint and common costs.

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Some low basic only subscribers may also take pay service, and these should be counted in this figure. Those who also take any higher level of basic service should be excluded.

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Counts driving installation and subscriber revenue are not necessary to determine basic or expanded basic rates, but they help drive estimates of installation and equipment revenue and therefore contribute to a consolidated revenue and expense analysis. These figures should be available by franchise area from subscriber billing systems. The counts include:

- The number of converters for which subscribers pay a monthly charge (B14).
- The number of remote control units in use for which subscribers pay a monthly fee (B15). Depending on local practices, it should be a subset of the number of converters (that is, some of the converters in the system will have remotes and some will not; B14 is to count all converters; B15 is to count only the ones with remotes).
- Total number of installations during the year to households which were connected for the first time and for which an installation charge was assessed (B15).
- Total number of installations during the year to households which were reconnected (a drop a previously been placed to the household unit) and for which an installation charge was assessed (B16).
- Total number of additional outlets installed during the year for which a subscriber charge was assessed (B17).

PEG support (annualized)

The model provides for public, educational, and government access (PEG) costs. Line B20 includes an annual amortization of any capital grants, studios, equipment, or other capital items required under the franchise (allocated if they serve more than one franchise area). The figure can be treated as a norm, but if it is localized it should be reviewed by the local franchise authority for accuracy.

Franchise area operating cost drivers

The following factors that drive operating costs may vary by franchise jurisdiction; depending on the extent of the variation, the model will allow them to be applied either on a franchise specific basis, or as norms:

- The franchise fee percentage of total revenue (B24)

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- The copyright fee percentages that apply to basic tier (B25) and expanded basic tier (B26) revenue, based on the distant signals carried on the respective tier.
- Any other state or local taxes that apply as a percent of revenue (B27). In some jurisdictions there may be utility, amusement, or other use taxes in addition to franchise fees.
- The expense paid for retransmission consent of local broadcast signals, if any (B28).

Other regulated rates

These rates are the one time charges paid for installation (B31, B32, and B33) and the monthly charges for equipment (B34 and B35). They will be determined separately from the basic and expanded basic rate-making, based on rules the Commission will establish. These rates are not required to determine basic or expanded basic rates, but are applied in the model as one of the drivers of installation and equipment revenue to generate a consolidated operating statement. The figures should be available by franchise area from subscriber billing systems.

Other revenue

The Act provides that advertising revenue and other consideration received by the operator for basic and expanded basic services be taken into account in setting rates. The model assigns this revenue to the tier(s) on which the revenues are generated. The example assumes that all advertising (B38) and home shopping services (B39) appear on the expanded basic tier, and that other revenue (B40) is attributable to only basic subscribers (thus it is assigned to the lowest tier). The revenue could be assigned differently than in the example, depending on the results of the Commission's study.

Channels

The number of channels on each tier (B43, B44, and B45) are applied by the model as an important factor for allocating joint and common costs. Only active channels, containing at least a minimum number of hours of daily programming, should be counted in the basic tiers. Any channels used for pay or pay-per-view should be counted, regardless of the daily hours of programming.

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Industry norms^{*}

Industry norms are applied as the cost drivers for many of the factors in the model. The purpose of using norms is to simplify the administration of the model, so that detailed cost finding will not be required for every community, and to help assure that the cost basis for rates is reasonable and prudent. Norms, in contrast to allowance of actual costs, provide incentives for cost efficiency. However, just as norms could be applied for many variables in the franchise specific section, actual local costs could also be applied in this section. The appropriate result depends on data analysis and policy decisions beyond the scope of this report.

The norms will be developed based on Commission analyses of cost data collected from cable systems. The data will be collected on a system basis because many local systems include more than one franchise area, and the required accounting information may not be readily available on a franchise specific basis. The variable norms will then be automatically adjusted to the franchise areas being analyzed, because certain model cost drivers will use the specific subscriber counts, plant miles, and channel allocations of the franchise area. The fixed costs will be tailored to the franchise area by matching the appropriate category of norms to the franchise area characteristics.

Thus there may be more than one set of norms, particularly for capital expenditure items and fixed operating costs, based on system or area characteristics. For example, capital costs may be classified according to system technical characteristics (megahertz capacity), and "fixed" operating expenses may be based on step functions of broad subscriber size categories (for example 0 - 5,000; 5,001 - 20,000; 20,001 - 100,000; etc.). The appropriate category norms would then be applied to each local franchise. The number of different categories will depend on the results of the Commission's data analysis, but should be kept limited to maintain the administrative simplicity of the model.

An explanation of each norm line item appears below.

Capital cost drivers

Normative capital costs are determined on a current replacement cost basis, in order to simulate an operator currently entering the market. Equipment and capitalized installation costs are excluded, because the rates for these items are determined separately. The respective

^{*} We suggest the variables shown here for the purpose of the Commission's initial data collection and analysis. The results of the initial analysis may indicate that fewer variables can be applied in the future.

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norms will be determined through the annual Commission sample survey, and it could be augmented by special engineering analyses the Commission may conduct. Each capital expenditure line is explained below.

- The aerial plant cost per mile (E12) includes all labor, materials and make ready expenditure necessary to build an average plant mile of cable for a system in the same category as the particular franchise area under analysis.
- The underground plant cost per mile (E13) includes all labor and materials expenditure necessary to build an average plant mile of cable for a system in the same category as the particular franchise area under analysis.
- The headend, towers, antenna, and hubs expenditure (E14) is the amount necessary to cover these items for a system in the same category as the particular franchise area under analysis.
- The "other" capital expenditure (E15) may include land, buildings, vehicles, equipment, or prematurity intangibles (excluding franchise value). The appropriate figure will be a norm for systems in the same category as the particular franchise area under analysis. The Commission should assure that acquisition costs are not double counted with any lease or rental costs that may be included in operating expense norms.
- The annual replacement percent (B16) is to be applied to the capital investment base. It is an amount to maintain the system.

Operating cost drivers

These figures will be derived from actual accounting records for systems included in the Commission's cost survey. The survey form will provide specific instructions to the cable operator on how to classify the requested data. The Commission will then analyze the responses to determine the norms. The "fixed" cost norms will be determined as residuals of the variable costs.

The model classifies programming costs as follows:

- Basic programming acquisition cost per basic subscriber (E19) is the cost to acquire programming carried on the basic tier, exclusive of PEG or local origination programming required by the franchise (B20), retransmitted local broadcast signals (B28), and revenue variable costs (copyright fees, for example).